REMARKS

The Applicant has now had an opportunity to carefully consider the comments set forth in the Office Action that was mailed December 8, 2010. The indication that **claims 6-8** include allowable subject matter and the acknowledgement of the persuasiveness of the Applicants' arguments are noted with appreciation. Nevertheless, all of the new and repeated grounds of rejection are respectfully traversed. Amendment, re-examination and reconsideration are respectfully requested.

The Office Action

In the Office Action that was mailed December 8, 2010:

claims 6-8 were identified as including **allowable** subject matter;

arguments presented in the paper filed September 13, 2010 with respect to **claims 1-9** were acknowledged as being persuasive;

claims 1-9 were objected to for alleged informalities included in **claims 1** and **9**; and

claims 1, 2, 4, 5 and **9** were rejected under 35 USC §103(a) as allegedly being obvious in view of U.S. Patent No. 5,818,539 to Lennen ("Lennen") in view of U.S. Patent No. 5,963,601 by Pon et al. ("Pon").

The Present Application

By way of brief review, the present application is directed toward methods for validating the detection of a correlation peak detected between a signal transmitted by a plurality of navigation satellites and a local replica generated by a receiver, said replica being of a spread spectrum signal characteristic of a particular satellite. The method includes comparing a determined correlation function with a theoretical autocorrelation function over the whole of the vector of the correlation function. For instance, once a main peak has been detected in a correlation function, a verification is performed that compares the correlation function obtained from the received signal with the theoretical autocorrelation function for the particular satellite signal. The main peak corresponds to the highest peak of the calculated correlation function. In practice, detecting the main peak of the correlation function enables an assumed synchronization time to be

determined. The theoretical autocorrelation function is calculated to obtain a main peak centered on the synchronization time. The two functions therefore have a main peak around the assumed synchronization time. The two functions also have **secondary peaks** or lobes. **By comparing** the secondary peaks (Fig. 2), that is to say by verifying, for example, whether they occur at the same time, a deduction is made with regard to whether the detected main peak is in fact associated with the satellite that is being looked for (paragraph 20).

The Cited Documents

In stark contrast, the primary reference of the Office Action to **Lennen does not disclose** comparing a correlation function with a theoretical autocorrelation function as a function of time of spread spectrum signal over the whole of the vector of the correlation function. For example, Lennen **does not disclose or suggest** comparing secondary peaks (e.g., compare the depiction of secondary peaks 5 and 7 in Fig. 1 of the present application to any of Figs 1, 4, 5, 7, 8, 9, 10, or 13 of Lennen). Where **the present application is concerned with identifying the satellite** associated with the signal, **Lennen is concerned with characterizing multipath** induced distortions in an autocorrelation function of a correlation receiver in order to reduce effects of these multipath induced distortions on the accuracy of detecting the time of arrival of a signal (Abstract).

Like Lennen, the secondary reference of the Office Action to **Pon** is concerned with problems associated with overlapping or composite signals due to **multipath** components. That is, Pon relates to a method for minimizing the deleterious effects of multipath on incoming digital spread spectrum signals that are encountered in signal receivers, using analysis of transitions of consecutive bit values in the incoming signal (column 1, lines 5-10).

With regard to the portion of **claims 1** and **9** related to "comparing said correlation function with the theoretical autocorrelation function includes a step of comparing secondary peaks of each of said functions, the Office Action relies on Figs. 1A, 1B, 2A-2D and column 2, line 11 - column 3, line 39, and asserts that the cited portions depict a comparison of main and side peaks.

However, it is respectfully submitted that Pon **does not disclose or suggest** a comparison of secondary peaks. Moreover, Pon **does not disclose or suggest** a comparison of a correlation function with a theoretical autocorrelation function.

Instead, as indicated at column 7, lines 47 and 48, Figs. 1A and 1B are graphical views of a representative autocorrelation function. As explained at column 7, lines 58-63, Figs. 2A and 2B depict an autocorrelation function formed using only a direct signal in contrast with an autocorrelation function AC (τ; multipath) and AC (τ; composite), respectively, where the multipath signal included in the composite signal has **positive polarity** relative to the direct signal. As explained at column 7, line 64 - column 8, line 2, Figs. 2C and 2D are similar to 2A and 2B except that the multipath signal included in the composite signal has **negative polarity** relative to the direct signal.

Accordingly, it is respectfully submitted that the cited Figures clearly **do not depict** the comparison recited in **claims 1** and **9** of said correlation function with the theoretical autocorrelation function. Still further, it is respectfully submitted that Pon **does not disclose or suggest** a comparison of secondary peaks. While the graphical depictions of the functions in the cited Figures include a depiction beyond their respective single peaks, it is respectfully submitted that Pon does not refer to this additional depiction. Moreover, Pon does not refer to secondary peaks. Still yet further, Pon does not refer to a comparison of secondary peaks. For example, it is respectfully submitted that the cited portions of columns 2 and 3 refer only to "the peak" (it is submitted, the primary or main peak) (e.g., see column 2, line 40, line 59; and column 3, line 3), thereby indicating an interest in only one peak.

For at least the foregoing reasons, **claims 1, 2, 4, 5** and **9** are not anticipated and are not obvious in view of Lennen and Pon.

The Claims Are Not Obvious

Claims 1, 2, 4, 5 and **9** were rejected under 35 USC §103(a) as allegedly being obvious over Lennen in view of Pon.

In an effort to explain the rejection of **claims 1** and **9**, the Office Action stipulates that Lennen **does not disclose** a method of validating the detection of a correlation peak between a signal transmitted by a plurality of navigation satellites and a local

replica, the method being characterized in that it further includes a step of comparing said correlation function with a theoretical autocorrelation function as a function of time of said spread spectrum signal characteristic of said satellite that is being looked for over the whole of the vector of the correlation function wherein comparing said correlation function with the theoretical autocorrelation function includes a step of comparing **secondary peaks** of each of said functions.

In an effort to compensate for this defect, the Office Action relies on Figures 1A, 1B, 2A - 2D and column 2, line 11 - column 3, line 39, of Pon.

However, Pon **does not disclose or suggest** any method of **validating** the detection of a correlation peak between a signal transmitted by a plurality of navigation satellites and a local replica generated by a receiver. **Instead**, Pon is related to a method for minimizing the deleterious effects of multipath on incoming digital spread spectrum signals that are encountered in signal receivers, using analysis of transitions of consecutive bit values in the incoming signal (column 1, lines 5-9). As indicated above, the cited portion of the specification of Pon refers to only a single peak and does not even acknowledge the existence of other peaks. For example, the cited portion refers only to "the peak" (column 2, line 40), the autocorrelation function peak (column 2, line 59) and "**the** equivalent peak value and peak location" (column 3, lines 3-4). As indicated above, Figs. 1A and 1B are graphical views of representative autocorrelation functions (column 7, lines 47-49) and Figs. 2A - 2D depict an autocorrelation function formed using only a direct signal, an autocorrelation function of a multipath signal and an autocorrelation function of a composite of a combination of direct and multipath signal, respectively, where the multipath signal has a **positive polarity** relative to the direct signal in the first case and a **negative polarity** relative to the direct signal in the second case (column 7, line 57 - column 8, line 2).

It is respectfully submitted that the Office **does not identify** secondary peaks in any of the Figures and **does not identify** any disclosure or suggestion that secondary peaks are identified, considered or compared according to the method of Pon. It is respectfully submitted that only **impermissible hindsight reasoning** based on information gleaned only from the present application would cause one to interpret Pon as disclosing or suggesting a comparison of secondary peaks of a correlation and an

autocorrelation.

For at least the foregoing reasons, it is respectfully submitted that **claims 1, 2, 4, 5** and **9** are not anticipated and are not obvious in light of Lennen and Pon.

Claim 2 depends from **claim 1** and is not anticipated and is not obvious for at least that reason.

With regard to **claim 4**, the Office Action again cites column 2, line 11 - column 3, line 39, of Pon.

However, while the cited portion mentions autocorrelation and also mentions a correlator, the cited portion **does not disclose or suggest** calculating a correlation between a correlation function and said autocorrelation function as is recited in **claim 4**. Instead, cited column 2, lines 12-13, indicate that the correlator constantly compares the incoming signal with a local replica. A microprocessor adjusts a time shift of the local replica signal until satisfactory agreement is obtained. It is respectfully submitted that the remainder of the cited portion discusses a number of techniques for calculating and evaluating an autocorrelation function and **does not disclose or suggest** a comparison of a correlation function with an autocorrelation function as is recited in **claim 4**.

For at least the foregoing additional reasons, **claim 4** is not anticipated and is not obvious in light of Lennen and Pon.

Furthermore, it is respectfully submitted that only **impermissible hindsight reasoning** based on information gleaned only from the present application, would cause one to misinterpret Pon as disclosing or suggesting the comparison of a correlation function with an autocorrelation function as is recited in **claim 4**.

For at least the foregoing reasons, the Office has not met its burden of presenting a *prima facie* case of obviousness and **claim 4** is not anticipated and is not obvious in light of Lennen and Pon.

Claim 5 depends from **claim 1** and is not anticipated and is not obvious in light of Lennen and Pon for at least that reason.

Comments on Statements of Reasons for the Indication of Allowable Subject Matter

The indication of allowable subject matter in **claims 6-8** is noted with appreciation. While the Applicant agrees that the claims are allowable, the Applicant

does not necessarily agree that the claims are allowable only for the precise reason indicated in the Office Action

Telephone Interview

In the interests of advancing this application to issue the Examiner is invited to telephone the undersigned to discuss the foregoing or any suggestions that the Examiner may have to place the case in condition for allowance.

CONCLUSION

Claims 1, 2 and **4-9** remain in the application. **Claims 1** and **9** have been amended as required by the Office. The amendments could have been anticipated and do not require a new search. For at least the foregoing reasons, the application is in condition for allowance. Accordingly, an early indication thereof is respectfully requested.

☒ Remaining Claims, as delineated below:

(1) FOR	(2) CLAIMS REMAINING AFTER AMENDMENT LESS HIGHEST NUMBER PREVIOUSLY PAID FOR		(3) NUMBER EXTRA
TOTAL CLAIMS	**8**	**- 20 =**	**0**
INDEPENDENT CLAIMS	**2**	**- 3 =**	**0**

☒ This is an authorization under 37 CFR 1.136(a)(3) to treat any concurrent or future reply, requiring a petition for extension of time, as incorporating a petition for the appropriate extension of time.

☒ The Commissioner is hereby authorized to charge any filing or prosecution fees which may be required, under 37 CFR 1.16, 1.17, and 1.21 (but not 1.18), or to credit any overpayment, to Deposit Account Number 06-0308.

Respectfully submitted,

Fay Sharpe LLP

March 4, 2011
Date

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